

REMARKS

This Amendment and Response is in reply to the Office Action dated April 10, 2003. Therefore, the time period for reply extends up to and includes July 10, 2003. Favorable reconsideration is respectfully requested in light of the above amendments and the following comments. Applicants have amended claims 1-20 above. New claim 21 has been added. New claim 21 and amendments to claims 1-20 are fully supported by the specification, figures, and claims as originally filed. Accordingly, no new matter has been entered hereby.

Objection to the Drawings

Replacement Figures 2 and 3 are submitted herewith to add legends indicating that the subject matter of those Figures is considered Prior Art. Withdrawal of the objection to the drawings is respectfully requested.

§ 102 Rejection

Claims 1-4, 8, 11, 13, 14, 19 and 20 were rejected under 35 U.S.C. §102(b) as being anticipated by Hanrahan, U.S. 5,870,252. Applicant respectfully traverses this rejection.

First, Hanrahan discloses a single transverse rib 66 disposed across a central cutout 68 of a load beam 12 to reinforce the overall stiffness of the load beam. From the shape and size of rib 66 shown in Figures 2 and 3, it appears that rib 66 was not cut from material that was removed to form cutout 68. Thus, it seems that rib 66 is a separate member that is adhered or otherwise fastened to the load beam.

Second, Hanrahan fails to disclose first and second rails that extend in a direction transverse to a longitudinal axis and out of a first plane of the bend section, as required by claims 1, 13, 19 and 20. Hanrahan discloses at column 6, lines 9-11 that rib 66 can be modified and that "another transverse rib other than the rib 66 can be added to the midsection 52." However, this statement in Hanrahan does not disclose and/or teach that a second rib can be added to midsection 52 in addition to rib 66 (i.e., so that more than one rib is mounted to the midsection at a given time). Furthermore, Hanrahan does not show two or more transverse ribs in any of the drawings of that reference and provides no disclosure or suggestion as to how or where a second transverse rib may be added to midsection 52.

Third, Hanrahan also fails to disclose first and second rails that are connected by a portion of the bend section that extends in the first plane such that the rails form an open channel.

An open channel in this context has an open cross-section as opposed to a closed channel that has a closed cross-section. Therefore, Applicant submits that Hanrahan fails to disclose every limitation of claims 1, 13, 19 and 20, and the claims that depend from them. Withdrawal of the rejection is respectfully requested.

§ 103 Rejection

Claims 5, 6, 12 and 17 were rejected under 35 U.S.C. §103(a) as being unpatentable over Hanrahan as applied to claims 1 and 13 above, and further in view of Allen et al., U.S. 5,894,381. Applicant respectfully traverses this rejection.

Claims 1 and 13 have been amended above and now require a second rail. Since claims 5, 6 and 12 depend on claim 3 and claim 17 depends on claim 13, Applicant believes that the rejection is now moot and requests the Examiner's reconsideration and withdrawal of the rejection. However, Applicant will next discuss Hanrahan and Allen to establish why these references should not be combined, and alternatively if they were combined why Applicant's invention does not result therefrom.

As discussed above, Hanrahan fails to disclose or suggest first and second rails extending in a direction transverse to a longitudinal axis of the bend section or suspension member, as required by claims 1 and 13. Allen fails to disclose rails extending in a direction transverse to a longitudinal axis. The flanges 341, 343, 344 extend in a direction parallel to a longitudinal axis of the load beam 100. Although Allen discloses orienting the flanges 341, 343, 344 either upward or downward, Allen fails to disclose or suggest aligning the flanges transverse to a longitudinal axis.

Further to the above, the single transverse rib 66 disclosed by Hanrahan and the flanges 341, 343, 344 disclosed by Allen are used to address different problems. Typically a suspension load beam, such as load beam 12 disclosed by Hanrahan and load beam 300 disclosed by Allen, has bending in several directions. Out-of-plane bending occurs along the length of the load beam parallel to a longitudinal axis of the load beam, and typically affects the up and down motion of a head supported at one end of the load beam. Out-of-plane bending is controlled in part by the stiffness of the load beam and bend section along a direction parallel to the longitudinal axis. In-plane bending occurs in the transverse direction of the load beam so as to affect side-to-side movement of the head. In-plane motion is controlled by the stiffness of the load beam and bend section in the transverse direction. Torsional bending involves rotation of the load beam

generally about the longitudinal axis and is also affected by the stiffness of the load beam and bend section in the transverse direction. The transverse rib 66 disclosed by Hanrahan is used to stiffen the load beam 12 in the lateral direction, thus affecting in-plane and torsional bending. The flanges 342, 343, 344 disclosed by Allen are used to stiffen the load beam 300 in the longitudinal direction, thus affecting the out-of-plane bending.

Applicant submits that it would not be obvious to one of skill in the art to combine the out-of-plane bending solution disclosed by Hanrahan with the in-plane and torsional bending solution disclosed by Allen. There is no disclosure and/or teaching in either reference which would suggest application of the disclosure in Allen to the disclosure of Hanrahan. Therefore, Hanrahan and Allen should not be combined in the manner proposed by the Examiner and so do not render obvious the limitations of claims 1 and 13.

Furthermore, even if the flanges disclosed by Allen were combined with the ribs disclosed by Hanrahan, there is no clear disclosure or suggestion of how or where flanges 341, 343, 344 may be combined with the single rib disclosed by Hanrahan so as to provide that "a portion of the base plate extending in the first plane connects the first and second rails to form an open channel across the bend section in a direction transverse to a longitudinal axis of the head suspension," as required by claim 13. The flanges disclosed by Allen are paired about a window (331-334) and are not connected with a portion of the load beam to form an open channel in a direction transverse to a longitudinal axis of the load beam. Therefore, Hanrahan and Allen further fail to disclose or suggest every limitation of claim 13.

Claims 19 and 20 also now recite a second rail.

Allowable Subject Matter

Claim 7 has been rewritten in independent form as new claim 21. Although claim 21 includes many of the limitations of original claim 1, Applicant notes that the above comments related to claim 1 should not be construed as limiting against claim 21.

Conclusion

In view of the above amendments and comments presented herein, favorable reconsideration in the form of a Notice of Allowance is respectfully requested. If the Examiner has any questions in regard to the foregoing, he is respectfully requested to contact Applicants' attorney below at (612) 336-4755.



Dated: 10 July 2003

Respectfully submitted,

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A handwritten signature in black ink, appearing to read 'B. H. Batzli', written over a horizontal line.

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Enclosures: New Figures 2 and 3